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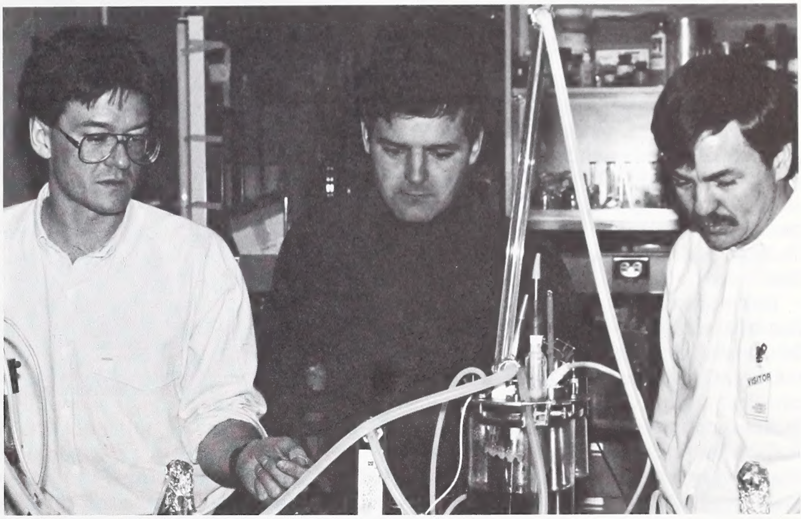
Newsline

Researcher flies high to get results



Astronauts Marc Garneau and Bjarni Tryggvason will act as back up for Dr. Brad Thompson. They spent a couple of days at the Research Council in February to get some technical background, train on the equipment and to do an equipment review.

One tends to think of a scientist as someone who has their feet firmly planted on the ground. Not so with Dr. Brad Thompson. This biotechnologist is up in the air over his latest research project—or at least he very soon will be.

With an objective of designing a fermentor that will operate in space, Dr. Thompson of the Biotechnology Department will climb aboard a NASA KC-135 aircraft March 22 and 23 in Houston, and go through 80 free falls from 28,000 feet. For some 20 seconds during each fall, he will be able to observe the operation of fermentation equipment at zero gravity.

At such high altitudes, the human body can go through a number of frightening changes, ranging from loss of sight, to loss of coherency, to nose bleeds and vomiting. To determine if he was physically capable of performing his experiments, Dr. Thompson enrolled in high altitude indoctrination training at Canadian Forces Base Griesbach in Edmonton.

Here, he was first exposed to simulated altitude conditions at 28,000 feet and asked to remove his mask until he began to experience the effects of hypoxia or oxygen deficiency. "This teaches you what your reaction to high altitudes is likely to be—failed vision in my case. Being able to recognize the onset of these symptoms and take the proper precautions is an important factor in avoiding problems during a flight."

He was then tested for his reaction to rapid decompression. He was taken to a simulated altitude of 8,000 feet without a mask. The room was explosively decompressed to 28,000 feet, at which time Dr. Thompson had to locate and don his equipment.

Dr. Thompson passed the tests with flying colors and, despite the probable discomfort, is now anxious to begin his investigations.

Test pump facility near completion

Anyone visiting the Alberta Research Council's Clover Bar site recently may have noticed a new addition to the pilot plant. The structure is home to a 20 metre high test pump facility—assembly of which is now near completion.

Tad Sudol, Oil Sands and Hydrocarbon Recovery Department, is the engineer in charge of refitting the test pump facility. He says the test rig will be used to simulate field pumping conditions. This facility, once completed, will be the first of its kind in Canada.

"We are trying to increase pump efficiency and develop better procedures to address field problems such as gas locks, steam flashing and premature wear. Our ultimate goal is to be able to improve the economics of present field pumping operations," Tad says.

The facility will be used in the Alberta Oil Sands and Technology Research Authority (AOSTRA) Strategic Research Program. Plans are under way for the department to work with an industrial partner in a Joint Research Venture on an advanced and computerized pump control system.

In general, however, the facility will be used to support industry in the development or verification of an improved design for a pump, or pumping system.

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Dean beats the IDD drum in Lethbridge

In Lethbridge, the Alberta Research Council and the Industrial Development Department are synonymous with one man—Dean Rosychuk.

A technology advisor with the Industrial Development Department, Dean's territory includes Brooks, the area south of Brooks, Medicine Hat and area, the Crowsnest Pass, along with the Lethbridge area.

Covering such a large territory is no small task. Dean spends about 40 per cent of his time travelling to centres outside of Lethbridge, meeting with companies, explaining the services available through his department, and assessing their needs.

In the last one and one-half years, he has met with approximately 250 local businesses, or 75 per cent of the target market. Ongoing contact makes him an excellent source of information on the business community in the area—information he says he would be happy to share with Research Council departments looking for new opportunities.

"For us to be successful in southern Alberta, it is necessary for local industry to understand what we can do for them; how we can assist them in solving their technological problems—in short, to increase our profile through a concerted effort."

Dean Rosychuk

The majority of the work he does is related to the Industrial Research Assistance Program (IRAP), primarily with the agricultural and food processing industries. For instance, he is currently involved with a company that is trying to develop a quick test to determine if a cow has conceived.

"I would like to see other departments emphasize the IRAP services available; to help their clients take advantage of the opportunities offered," he says.

Besides meeting with companies on a one-to-one basis, Dean is involved with a number of related associations. He is a member of the local Chamber's Industrial Affairs Committee, and the Lethbridge section of APEGGA (Association of Professional Engineers, Geologists and Geophysicists of Alberta). He lectures regularly at the Lethbridge Community College's Entrepreneurial Centre, and participates in their course trade shows three times a year.

While the area does not support a large high technology industry, Dean is working to establish a local council for advanced technologies. "My goal is to establish a pool of expertise able to advise on possible solutions to problems in the local area," he says.

Fume hood update

The ventilation system at the Alberta Research Council's Clover Bar site is to be refitted this year, starting with the laboratory building.

Of primary concern are the fume hoods, which must be brought up to Research Council standards. Some effort also will be directed towards improving the existing heating and cooling systems.

Disruption to research work will be kept at a minimum, although staff may experience some inconvenience as fume hoods will have to be shut down occasionally to facilitate the upgrade. Whenever possible, major shutdowns of services will be scheduled for when staff are not in the building.

On-site repairs began the first week of March and are expected to be complete by mid July. A similar upgrade is scheduled to take place in the site's pilot plant area later this year.

Speakers series begins March 28

The AOSTRA/University Working Party will continue its university speakers series this spring. The series was initiated last year to bring distinguished researchers from the AOSTRA/University/Industry program into the Alberta Research Council to discuss their work and meet their Research Council colleagues.

Dr. Murray Gray, Chemical Engineering Department, University of Alberta, will give the first presentation March 28 at 9 a.m. in the multipurpose room of the southeast Edmonton site. His topic will be "Role of Catalysts in Hydrotreatment of Bitumen Fractions".

Dr. Bing-Yu Peng, Chemical Engineering Department, University of Saskatchewan, will speak on April 11. Dr. John Scott, Civil Engineering Department, University of Alberta, will give a presentation on May 16. Topics, times and locations for these two speakers will be announced in upcoming issues of Newsline.

This is the third year of operation of the Working Party, which was formed in 1985 to monitor the University Program through the Research Council's membership in the AOSTRA/ACCESS agreement. The Working Party's mandate is to represent the Research Council's interests in the program, and to transfer technology to potential users within the Research Council.

Information on the speaker series and the activities of the Working Party may be obtained from the Speaker Coordinator, Leszek Lewkowicz, Coal and Hydrocarbon Processing Department, at 955-7891, or the Chairman of the Working Party, Eddy Isaacs, Oil Sands and Hydrocarbon Recovery Department, at 464-9400.

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Two staff members reach 25-year mark

Ron Wasel

Ron Wasel, Gasoline and Oil Testing Laboratory, and Don Morrison, Oil Sands and Hydrocarbon Recovery, have a lot in common. Both attended the Southern Alberta Institute of Technology (SAIT) and obtained a diploma in Laboratory Technology, both joined the Alberta Research Council in 1962, and both are this year celebrating their 25th anniversary with the same organization.

Ron has spent all of his 25 years with the Research Council working in the Gasoline and Oil Testing Laboratory.

"I have worked with great people who have given me a lot of encouragement and made my time with the Research Council rewarding and interesting. I have been fortunate too in that I have always enjoyed the work conducted in this laboratory, and have been with an organization that allowed me to start at the bottom and work my way up," he says.

When he first joined the Research Council, Ron worked as a laboratory technician, performing routine analyses.

By 1975, he had earned his B.Sc. from the University of Alberta, working extra hours to make up the time spent away from the laboratory. His initiative paid off, and in 1977 Ron was promoted to the position of assistant chief chemist, responsible for the general direction of the laboratory, some laboratory analyses and the preparation of client reports. He was promoted to assistant research officer in 1980, and to chief chemist in 1985.

Throughout the years, Ron has remained active in his chosen field. He is currently a member of the Society of Automotive Engineers, and the American Society for Testing and Materials. As a member of the Canadian General Standards Board, he sits on the Test Methods, Petroleum Products, Petroleum Coordinating, Middle Distillate, and Automotive Gasoline Committees. In 1987, he and his staff worked closely with the Standards Council of Canada to have the laboratory accredited.

His energies have not been confined to outside activities. Over the years, Ron has served the Research Council as a safety warden, a first aid attendant on the emergency squad, and as a member of the Safety Committee. He also was an active member of the former social club, and the bowling and curling leagues. He currently sits on the Analytical Services Coordinating Committee.

Still, most rewarding of all are the many friends made. "Time has a way of passing unnoticed when you enjoy what you are doing and have good people to work with," he says. "There are times, however, when it seems impossible that I have been here this long."

Don Morrison

Staff at the Research Council's Clover Bar site rely on Don to keep their VAX computer system running smoothly. Systems manager for the site-wide facility, Don is responsible for providing service to users and their accounts, as well as overseeing the management and operation of the computer.

Working with computers is a relatively new development in Don's career. He started out as a laboratory technologist in the Mass Spectrometry Laboratory. Here, he assisted with kinetics research on chemical compounds in petroleum-related studies.

Don was transferred to the then Chemical Division in 1972. In this first contact with oil sands research, he was involved in examining the problem of tailings produced in the hot water extraction process. In 1977, Don was seconded to the Oil Sands Research Department to work on the surface chemistry of the bitumen-water interface.

In the meantime, Don completed a three-year evening course in computer programming through the University of Alberta's Faculty of Extension. When the department's first computer was purchased by the Analytical Group in 1980, Don was appointed programmer analyst.

"It was an opportune change," Don says. "The shift in emphasis gave me new challenges to look forward to, while the program work I performed kept me in touch with the chemical aspect of my job.

"The chance to exercise my own initiative and creativity in new areas has been very satisfying, and I am very appreciative of the many people who have made my time with the Research Council so enjoyable."

Employee changes

We welcome to the Research Council: **Alexander Babchin,** Oil Sands and Hydrocarbon Recovery; **Robert Booth,** Computing; **Cheryl Boyko,** Industrial Development; **Tamara Danyluk,** Advanced Technologies; **Anne Fincati,** Advanced Technologies; **Chris Jossy,** Oil Sands and Hydrocarbon Recovery; **Richard Kasperski,** Advanced Technologies; **Yvonne Mariacci,** Oil Sands and Hydrocarbon Recovery; **Huseni Rangwala,** Coal and Hydrocarbon Processing; **Shaun Serediak,** Oil Sands and Hydrocarbon Recovery.

We say goodbye to: **Robert Oswin, Marcel Polikar, Tim Southern, Teddy Schmidt.**

Senior Research Officer appointed to Oil Sands

The Oil Sands and Hydrocarbon Recovery Department of the Alberta Research Council recently acquired a specialist in the area of colloid and surface chemistry with the appointment of Dr. Alexander J. Babchin to the position of Senior Research Officer.

Dr. Babchin obtained his Ph.D. in Chemical Engineering from the National Institute of Photochemical Engineering, Moscow, USSR, where he studied colloid chemistry and rheology in application to photoemulsions.

Prior to joining the Research Council in January, he worked as an independent chemical and engineering consultant, performing contract work for private industry and the U.S. Government. He also has academic experience, including a position as a senior research associate with the Institute of Applied Chemical Physics, Department of Chemical Engineering, University of New York.

One of Dr. Babchin's first tasks with the Department will be to make operational new equipment for taking electroacoustical measurements of colloidal properties at high concentrations. This equipment will be the first of its kind in Canada and will provide readings of electrokinetic properties and coagulation kinetics.

Dr. Babchin says he is impressed with the level of research being conducted by the Oil Sands and Hydrocarbon Recovery Department. "I am looking forward to the opportunity of being involved in some long-term, serious research, in addition to shorter-term, consulting-type projects," he says.

Dr. Alexander Babchin

Staff notes

Donald Keith, Geological Survey Department, was recently awarded the Link Award of the Canadian Society of Petroleum Geologists (CSPG). The award recognizes the best oral presentation to the Society in Calgary by a CSPG member. Don was selected for his May presentation of the paper "Sedimentology and Sandstone and Conglomerate Geometry of the Cardium Formation, Willesden Green Field, West Central Alberta".

The award, to be presented at the society's awards dinner in March in Calgary, also includes a lecture tour of at least five Canadian universities.

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Dr. Brad Thompson has assumed the responsibilities of Acting Head, Biotechnology Department. The appointment was made effective February 1.

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Walt Nielson has been appointed Acting Director of the Computing Department, effective February 15.

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Scientific staff from the Alberta Research Council are eligible to apply for the Senior Research Fellowship Program recently announced by the Alberta Oil Sands Technology and Research Authority (AOSTRA).

The program is intended to encourage outstanding individuals to develop research activities relevant to AOSTRA's mandate, and to encourage technology transfer by promoting personal contact and involvement.

Staff who wish to obtain further information, or an application form, are asked to contact: The Registrar, AOSTRA, at 500, 10010-106 Street, Edmonton, Alberta, T5J 3L8.

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The Publications Sales Office at the Research Council's southeast Edmonton site is now staffed on Tuesdays and Thursdays, from 8:15 to 4:30, only. Urgent questions should be directed to library staff Mondays, Wednesdays and Fridays.

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Last year's United Way campaign exceeded its goal of $6.2 million. For their part in this effort, Alberta Research Council employees were presented with an employee silver award for "outstanding generosity to our community through support of the United Way of Edmonton and area".

Nominations invited

Nominations for the Karl A. Clark Distinquished Service Award have been invited by the Alberta Oil Sands Technology and Research Authority (AOSTRA).

The award is presented annually to individuals who have made outstanding contributions toward the commercial development of Alberta's oil sands resources. It is named after the late Dr. Karl A. Clark, who dedicated over 40 years to developing the oil sands, and recognizes contributions that are technical, commercial, or social in nature.

Nomination deadline is March 31, 1988. Forms and further information may be obtained from the registrar, AOSTRA.